CLAIMS

What is claimed is:

1. A method for handling a communication comprised of sequentially transmitted slots of equal length received by at least two antenna assemblies for connection to a device for processing, comprising:

a) transferring outputs of said antenna assemblies to said device in an alternating fashion so that successive slots are transferred to said device from a different one of said antenna assemblies;

b) monitoring each received slot for signal quality; and

c) modifying the transferring sequence so that at least two consecutive slots are transferred to said device from that one of the antenna assemblies providing slots of better signal quality for every single slot of lesser signal quality transferred to said device by the remaining one of the antenna assemblies.

2. The method of claim 1 further comprising continuing monitoring of at least one slot from each antenna for signal quality to detect changes in signal quality.

3. The method of claim 2 further comprising reverting back to the transfer pattern of step (a) when the signal qualities of slots from said antenna assemblies are substantially equal.

4. The method of claim 1 wherein step (c) further includes increasing a number of sequential slots transferred from the antenna assembly having better signal quality for every single slot transferred from the remaining antenna assembly outputting a signal of lesser quality when a difference in signal quality between the better quality signal and the lesser quality signal is increasing.

5. The method of claim 1 wherein the signal received by the antenna assemblies is modulated for transmission and said device is a receiver which demodulates the received slots.

6. A method for processing a communication comprised of sequentially transmitted slots of equal length received by first and second antenna assemblies comprising:

multiplying slots respectively outputted from said first and second antenna assemblies with a signal F having a given frequency f and summing the converted signals to provide outputs A, B, A + B, A - B; A +B * F and A * F + B, where slots A are derived from said first antenna assembly and slots B are derived from said second antenna assembly.

7. The method of claim 6 further comprising monitoring the slots A and B for signal quality and passing only that one of the slots A and B having better signal quality.

8. The method of claim 7 further comprising reversing the selection of the slots when signal quality of the slots A and B is reversed.

9. The method of claim 6 further comprising selecting a frequency f of signal F which is chosen so that when the slots A and B are multiplied by the signal F, they are orthogonal.

10. The method of claim 9 wherein the frequency selected is 240kHz.

11. Apparatus for enhancing signal quality of a communication delivered to a device, said signal having sequentially transmitted slots, comprising

first and second antenna assemblies for receiving said communication;

a switching unit for switching an output of each antenna assembly to said device in an alternating fashion so that sequential slots are switched to said device by a different one of the antenna assemblies;

means for monitoring outputs of the antenna assemblies for signal quality; and;

said switch means including means responsive to said monitoring means for modifying the switching sequence to cause at least two slots to be coupled to said device from that antenna assembly having a better signal quality before a slot is transferred from that antenna assembly have a poorer signal quality.

12. The apparatus of claim 11 wherein said means for modifying returns the switching pattern to sequential slots being coupled to said device by different antenna assemblies when the signal qualities of outputs of the first and second antenna assemblies are substantially equal.

13. The apparatus of claim 11 wherein said device is a receiver having means for processing the slots transferred thereto to obtain baseband signals.

14. The apparatus of claim 11 wherein said monitoring means evaluates substantially an entire slot for determining signal quality.

15. The apparatus of claim 11 wherein monitoring means evaluates only a few initial symbol(s) of a slot for determining signal quality.

16. The apparatus of claim 15 wherein only one symbol of a slot is evaluated.

17. The apparatus of claim 15 wherein only a first few symbols of a slot are evaluated.

18. The apparatus of claim 15 wherein a signal communicated to said antenna assemblies includes error correction encoding and said apparatus further comprises:

means for restoring information lost from the symbols employed to determine signal quality.

19. The apparatus of claim 15 wherein the evaluation of the monitoring means includes means correlating the initial symbol(s) and a reminder of the time slot.

20. The apparatus of claim 19 wherein the correlating means stores energy of a slot(s) and a block error of the time slot to determine correlation.

21. The apparatus of claim 15 further comprising means for evaluating signal quality at a beginning of a time slot and processing a remainder of the received time slot based on said evaluation.

22. The apparatus of claim 21 wherein said means for making a signal quality evaluation includes means for determining a correlation between a quality value of the first bit and the remaining time slot.

23. The apparatus of claim 21 wherein said communication signal is a time division duplex (TDD) type and said means for making a signal quality evaluation includes means for determining a correlation between a first bit and channel quality.

24. The apparatus of claim 21 wherein said communication signal is a frequency division duplex (FDD) type and said means for making a signal quality evaluation includes means for determining a correlation between a short segment of a received pilot signal and channel quality.

25. Apparatus for processing a communication received by at least two antenna assemblies said communication begin comprised of sequentially transmitted slots of equal length, said apparatus comprising:

a channel estimator;

first and second units for determining signal quality based on at least one of history, recent channel estimation and optimization.

26. The apparatus of claim 25 wherein the outputs of said first and second units are combined in a combining means.

27. The apparatus of claim 26 wherein the output of said combining means provides a signal quality output.

28. The method of claim 1 wherein step (b) further comprises:

(d) measuring noise energy in a guard period of a time slot.

29. The method of claim 28 wherein step (d) further comprises employing the measured noise energy for determining a signal-to-noise ratio.

30. The method of claim 1 wherein step (b) further comprises:

(d) measuring, for each antenna, noise energy in a guard period of a time slot;

(e) measuring for each antenna, energy per bit; and

(f) selecting that antenna having the highest energy per bit to the noise energy ratio.

31. The method of claim 1 wherein step (b) determines correlation between a time slot symbol and a reminder of a time slot.

32. The method of claim 1 wherein step (b) determines correlation between a time slot symbol and a block error of the symbol.

33. The method of claim 31 wherein the correlation is determined by storing energy and block error of the time slot.

34. The method of claim 1 wherein step (b) comprises:

(d) determining a correlation between measured quality in one of a first bit and symbol and a remainder of one of a time slot or frame.

35. The method of claim 34 wherein step (d) includes:

computing energy per symbol of at least a first symbol and comparing the computed energy with an energy per symbol of a remainder of the time slot.